

XXXVI. *Notice of some Hemipterous Insects from Boutan (East Indies), with Descriptions of the new Species.* By W. S. DALLAS, ESQ., F.L.S.

[Read February 5th, 1849.]

HAVING been kindly permitted by Dr. Horsfield to examine the *Hemiptera* belonging to the museum of the East India Company, I have now the pleasure to lay before the Society a note of those species of *Scutelleridæ* and *Pentatomidæ* contained in a small collection of Hemipterous insects from Boutan. I have thought it better to give a list of all the species in this collection, as Boutan (or Bhotan) is a district in the extreme north of India, almost entirely surrounded by hills, and from this isolated position its Fauna becomes interesting. A good many of the species have been originally described from Javanese specimens.

Fam. SCUTELLERIDÆ.

Of the *Scutelleridæ* we have the Australian and Javanese *Tectocoris Banksii*, Don.; *Pæcilocoris Druræi*, Lin.; *P. Childreni*, White, and *P. Hardwickii*, Hope. Of one of the species of *Pæcilocoris* the collection contains the larvæ, apparently in the last state, with a memorandum attached, to the effect that the insect is "said to infest the tea plants particularly." Of this family there are also *Callidea abdominalis*, *purpurea* and *Roylii*, Hope, and a new species, nearly allied to the last mentioned, which I have named

Sp. 1. *Callidea spinigera*. (Plate XIX. fig. 1.)

C. fusco-testacea, violaceo-vel æneo-nitida, thoracis angulis lateralibus in spinam parvam acutam productis, abdominis margine crenato, rubro, violaceo-variegato, ♂ ♀.

Long. ♂ lin. 7, ♀ lin.  $7\frac{1}{2}$ , hemelytrorum membrana inclusa.

Broadly ovate, rather convex. Above brownish testaceous, with violet or brassy reflections, very thickly and finely punctured. Head violet, shining, faintly punctured and transversely wrinkled, the central lobe darker in colour. Eyes brown; ocelli red. Thorax faintly punctured, with the lateral angles produced into a small acute spine on each side, the anterior and lateral margins, and in the male the whole anterior portion, coppery or violet, shining; on each side, towards the anterior margin, is a small

transverse fovea, surrounded by a brassy green ring. Scutellum very finely punctured, and faintly wrinkled transversely, especially at the base, which is brassy, coppery or violet. Elytra brown, with the margins pale testaceous. Margins of the abdomen projecting slightly beyond the scutellum, bright red, crenated, each segment bearing two small projections or tubercles; abdomen beneath deep blue violet, very smooth and finely punctate, with a strong brassy green reflection; a violet line on the margin of each segment, running between the red tubercles. Anal apparatus red, violet at base in the male. Breast shining violet, punctured; the antero-lateral margins and the prominent lateral angles reddish. Legs shining violet, finely pilose. Tarsi black. Antennæ and rostrum black, the former covered with short hairs.

This species in its general form, and more especially in the form and colouring of the abdomen, approaches very closely to *C. Roylii*; but it differs from this and indeed from all other known species of the genus, in the sharp spines which exist at the lateral angles of the prothorax. It is probable that the insect, when alive, presents a most splendid appearance, as the metallic tints, which ornament its surface when viewed in certain lights, are evidently only the remains of former brilliancy.

Three more species complete the list of *Scutelleridæ*; they are the *Eucorysses Baro*, Fab.; *Calliphara nobilis*, Fab. (*Tectocoris perplexa*, Hope); and the *Coptosoma cribrarium*, Fab.

#### Fam. PENTATOMIDÆ.

Of the group *Asopides*, Am. Serv. there are but two species. The first is the *Cazira verrucosa*, Westw. (not Am. Serv.), of which there is a specimen of the male in the typical condition, and one of what appears to be a black variety of the female. The other species appears to be identical with the *Asopus (Arma) geometricus*, (Hag.) Burm., and approaches very closely to *Pentatoma aliena*, Hope. As neither of the descriptions given by these authors is sufficient to determine the insect perfectly satisfactorily, I have subjoined one in a more detailed form.

#### GENUS ARMA, Hahn., Am. and Serv.

Sp. 2. *Arma geometrica*. (Plate XIX. fig. 2.)

*Asopus geometricus* (Hag.), Burm., Rh., p. 80, 7.

*Pentatoma aliena*, Hope Cat., p. 40?

A. elongata, olivacea vel fusco-testacea, punctatissima, spinis

thoracis unidentatis; linea transversa thoracis, scutelli apice, marginibusque elytrorum, albidis, ♀.

Long. lin. 7.

Body elongate-ovate, the sides nearly parallel. Olive-brown, or brownish-testaceous, very thickly punctured. Thorax with the lateral angles produced into a short, acute, black spine, which is distinctly toothed on its hinder margin; a pale yellowish line runs across the disc of the thorax from angle to angle. Scutellum rather dark at the base, the apex white.\* Elytra with the external margin whitish; the membrane transparent. Abdomen beneath punctured, with an irregular line down the centre, and the stigmata, black. Legs, rostrum and antennæ yellowish brown; the tip of the third joint of the antennæ, and the whole of the fourth, except the base, black. Tarsi pitchy.

Of the *Cydnides* there is only one small species, which appears to agree very nearly with Hope's description of his *Cydnus Capicola*.

Amongst the *Halyses* we have only four species, of which one is the *Halys (Dalpada, A. and S.) oculata*, Fab.; the second approaches very closely to *Halys obscura*, Hope; the third appears to be undescribed. This species will not enter any of MM. Amyot and Serville's sufficiently numerous genera. According to their systematic table, it should fall in their genus *Thelima*; but it does not at all agree with the characters given of that genus in the body of the work. It appears to me to enter, or to approach very closely to, the genus *Dichelops* of the Marquis Spinola, and under this it will be best to range it. The rostrum barely reaches the second segment of the abdomen. The lateral lobes of the head (fig. 3 a) pass the central one considerably, and meet beyond it, but leave a good-sized notch at the apex of the head. The lateral margins of the head are notched a little behind the apex, and again a little before the eyes. The ventral furrow is scarcely perceptible. I call the species—

Sp. 3. *Halys (Dichelops?) obscura*. (Plate XIX. fig. 3.)

H. (D.) ovata, fusca, punctatissima, antennis rufo-fuscis, articulis 2 ultimis, basi excepto, nigris, ♂, ♀.

Long. lin. 7—7½.

Body ovate. Above brown, obscure, very thickly punctured. Thorax with the lateral angles somewhat prominent, margins pale

\* This character is not given by Burmeister.

or yellow. Head, thorax and scutellum slightly clouded with yellowish. Elytra with a reddish tint on the coriaceous portion; membrane transparent, with a pitchy black spot at the internal basal angle. (This spot is concealed by the tip of the scutellum when the wings are closed.) Margins of the abdomen projecting considerably beyond the elytra on each side. Abdomen beneath reddish or testaceous brown, smooth, shining; the disc sparingly, the lateral margins very thickly and finely punctured. Breast concolorous with the abdomen, sparingly punctured, more thickly so at the sides. Legs reddish brown, punctured with black; the tarsi darker. Rostrum reddish brown, darker at the tip. Antennæ of the same colour, the two last joints black, except at the base.

The species appears to vary a good deal, in the colour being paler or darker, and more or less mixed with yellowish.

Plate XIX. fig. 3 a, the head seen from above; 3 b, the head seen from beneath, laterally.

The fourth species is the *Halys (Nevrosia) nubila*, Fab.

Of the *Pentatomides* there are also four species, of which two appear to be undescribed. Those already described are the *Strachia limbata*, Fab., a Javanese species, and the Indian *Pentatoma ventralis*, Hope. Nearly allied to the latter is one of the other species, for which I propose the name of—

Sp. 4. *Pentatoma crassiventre*.

*P. rotundato-ovatum*, olivaceo-testaceum, angulis thoracis prominentibus rotundatis; abdomine testaceo, macula magna subapicali nigra, ♀.

Long. corp. lin. 4, lat. thor. lin. 3.

Body roundish. Above olive-testaceous, opaque, thickly and finely punctured with black. Head very thickly and rather coarsely punctured. Eyes brown. Prothorax with the lateral angles considerably produced on each side, but rounded at the apex; emarginate anteriorly for the reception of the head, the posterior margin straight. The anterior portion of the thorax is more thickly punctured than the posterior, with a faint transverse line on each side near the anterior margin, and a very narrow longitudinal line on the disc, smooth, impunctate. Scutellum rather more faintly punctate towards the apex. Elytra with a small impunctate spot on the disc; the membrane transparent. Back of abdomen pitchy black, the margins testaceous, very thickly punctured with black. Beneath testaceous, smooth, slightly shin-

ing. Abdomen convex, punctured with black, the punctures very close together towards the margins, thus forming a broad cloudy line down each side within the line of stigmata; the base of the second segment, and a large spot in the centre of the fifth and sixth segments, black. Breast and underside of head concolorous with the abdomen. Legs pale testaceous, with distinct pitchy punctures; those on the thighs much larger than those on the tibiæ, the apex of the latter and the tarsi tinted with ferruginous. Antennæ with the two basal joints (which are all that exist in the specimen) pale testaceous; rostrum of the same colour, with the apex pitchy black.

The fourth species appears to be nearly allied to *Cimex rufipes*, Linn., which forms the type of the genus *Cimex*, as restricted by Amyot and Serville. It appears to agree in most of its characters with their description of that genus, but is distinguished from all the other *Pentatomides* by its possessing only two joints in the tarsi. It will probably be found to form the type of a distinct sub-genus; but as the specimen before me is very much mutilated, it will be better for the present to place it provisionally in the genus *Cimex*.\*

Sp. 5. *Cimex? Boutanicus*. (Plate XIX. fig. 4.)

*C. fuscus*, rugoso-punctatus, angulis lateralibus thoracis in processum magnum latum 5-dentatum productis ♀.

Long. lin.  $9\frac{1}{2}$ , hemelytrorum membrana inclusa.

Body ovate. Above brown, obscure, thickly and strongly rugose-punctate. Head rather thickly punctured, nearly as broad in front as behind, and with the anterior margin strongly notched; slightly wrinkled posteriorly. Eyes pitchy; ocelli yellowish. Thorax with the enlarged lateral angles considerably directed forwards, with five teeth at their apex, of which the third and fourth from the front are rounded, the others acute. A strong spine at each anterior angle of the thorax, immediately behind the eyes, and the antero-lateral margins are strongly serrated. Scutellum rather elongated, narrower towards the apex, which is less punctured than the rest of the body, and margined with yellowish. Elytra rather paler than the rest of the surface,

\* MM. Amyot and Serville place this genus amongst the *Rhaphigastrides*, there being a very rudimentary spine at the base of the abdomen; but although the present species possesses the slight keel on the sternum, which might appear to refer it to the following group, yet as I can discover no trace of a ventral spine, I have thought it better to place it in the *Pentatomides*.

thickly and coarsely punctured, and somewhat rugose; membrane brown. The sides of the abdomen scarcely project beyond the elytra. Abdomen beneath reddish brown, smooth, impunctate. Breast paler, with numerous scattered black punctures, which are larger and closer together on the antepectus; a large dull wrinkled patch on each side of the post and medipectus. Coxæ smooth. Legs yellowish brown, mottled with reddish brown; the two-jointed tarsi are rather paler. Antennæ (mutilated) pale yellowish brown, the basal joint, and the others at base and apex, paler. Rostrum pale brown, with the apex darker, and the tip of the basal joint pitchy black.

Plate XIX., fig. 4 *a*, represents the head seen from above; 4 *b*, the head seen from beneath; 4 *c*, a posterior tarsus.

The *Rhaphigastrides* have five representatives in this collection. Of these two belong to the genus *Rhaphigaster*, Lap., and the rest to *Acanthosoma*. Of the former, the universally distributed *Rhaph.* (*Nezara*) *smaragdulus*, Fab., with its variety *R. torquatus*, Fab., is one; the second species forms the type of a very distinctly marked sub-genus. It appears to stand between *Nezara*, Am. and Serv. (*Gastraulax*, H. Sch.), and *Rhaphigaster*, Lap., as restricted by those authors; differing strikingly from the former in the length of the ventral spine; from the second in the strongly developed ventral keel, and from both in the form of the thorax, the form of the head, and several other characters.

## Genus RHAPHIGASTER, Lap.

### Sub-genus PRIONOCHILUS.

*Head* (fig. 5 *a*) flat above, narrowed anteriorly, the lateral lobes passing the intermediate, and united in front of it; apex of head rounded, with a very slight notch in the centre. *Eyes* rather small, very slightly prominent, touching the anterior margin of the prothorax. *Ocelli* small, situated rather behind the eyes, and nearer to those organs than to one another. *Antennæ* (fig. 5 *a*) 5-jointed, about half as long as the body; first joint short, not reaching the anterior margin of the head; the other joints gradually increasing in length towards the apex; fourth and fifth joints thickest; fourth slightly compressed. *Rostrum* (fig. 5 *b*) reaching the base of the ventral spine, of four joints; the first short, as long as the head, inclosed entirely in a canal, which reaches the base of the head; second and third joints equal,



longer than the first; fourth as long as the first. *Thorax* inclined anteriorly; the anterior margin strongly emarginate, almost in a semicircle, for the reception of the head; the lateral angles very prominent, acute, and curved forwards, their points reaching beyond the line of the anterior angles; the antero-lateral margins are strongly serrated, and there is a distinct tooth behind each lateral angle. *Scutellum* long, passing the centre of the abdomen, the apex narrowed and rounded. *Membrane of elytra* reaching beyond the apex of the abdomen, with eight longitudinal nervures, of which the third, fourth and fifth from the inner margin spring from a basal cell; the sixth and seventh are united at the base, and the eighth is very short. *Abdomen* extending a little beyond the elytra on each side; beneath strongly keeled, with a strong basal spine, which extends forwards as far as the middle of the space between the intermediate and anterior pairs of legs. *Vulvar apparatus* as in *Rhaphigaster*, &c. *Mesosternum* with a slight keel in the centre. *Legs* rather slender, the posterior longest. *Tibiae* channelled on the outside, and fringed with small stiff hairs, especially towards the apex. *Tarsi* (fig. 5 c) pilose, 3-jointed, basal and terminal joints equal; second very short. *Claws* and *pulvilli* moderate.

The name *Prionochilus* refers to the serrated margin of the prothorax.

Sp. 6. *Rh. (Prionochilus), 8 punctatus*. (Pl. XIX. fig. 5.)

R. (P.) fusco-testaceus, nigro-punctatus; thoracis disco, scutellique basi, punctis 4 majoribus nigris, his in linea transversa dispositis. ♀.

Long. lin.  $10\frac{1}{2}$ ; lat. thor. lin. 6.

Ovate, testaceous brown, opaque, beneath paler. Above thickly and finely punctured with black. Prothorax strongly rugose-punctate, with four black dots arranged in a transverse line across the disc, from the base of one lateral angle to the other; the marginal serrations yellowish. Scutellum less closely punctured than the thorax, distinctly rugose, with four black dots at the base, placed two close to the posterior margin of the prothorax, about the same distance from each other as from the lateral angles of the scutellum, and two behind these, forming with them a small square. On each side of the tip of the scutellum is a small yellow impunctate spot. Elytra with the punctures arranged somewhat nebularly; a small impunctate spot on the disc, a little behind the middle. Membrane transparent, with a brownish tinge.

Ventral spine brown. Legs, rostrum and antennæ brownish testaceous; the fourth joint of the antennæ, except its base, the fifth joint entirely, and the apex of the fourth joint of the rostrum, black.

Plate XIX., fig. 5 a, represents the head seen from above; 5 b, the head from beneath and laterally; 5 c, a tarsus.

MM. Amyot and Serville have established a genus which they name *Sastragala*, for the reception of such species of *Acanthosoma*, as have the posterior angles of the prothorax much produced into a sharp spine. This character is scarcely sufficient to warrant such a separation, and the greater or less sharpness of the spine is probably only a sexual character. It is to this division of the genus that the three species from Boutan belong; the first being the *Acanthosoma uniguttatum*, Don., the species cited by Amyot and Serville as the type of their genus. The other two appear to be undescribed.

Sp. 7. *Acanthosoma (Sastragala) cornutum*. (Pl. XIX. fig. 6.)

A. (S.) supra olivaceum, punctatum, thorace cornuto, scutello immaculato, ♂. ♀.

Long. lin. 6; lat. thor. lin.  $4\frac{3}{4}$ .

♂, ♀. Above olive, slightly clouded with yellowish, rather thickly and strongly punctured. Thorax with the lateral angles strongly cornuted; the processes being more darkly coloured than the rest of the surface. The antero-lateral margins of the prothorax beneath are greenish. Scutellum acute, slightly sinuated on each side immediately before the apex. Elytra thickly and strongly punctured; membrane brownish at the base, particularly at the internal angle. Antennæ with the first and second joints concolorous with the body, the apex, and sometimes the whole of the third, and the fourth and fifth joints pitchy. Legs pale brownish yellow, with the tibiæ and tarsi somewhat darker. Ventral spine long, reaching as far as the base of the anterior legs.

♂, with the thoracic processes dark olive-green, rounded at the apex, beneath flat, but not channelled. The membrane of the elytra is pale, semitransparent; the abdomen above red, with broad whitish margins. The body beneath is pale ochreous, with a reddish tinge towards the apex of the abdomen. Ventral spine pale.



♀, with the thoracic processes pitchy, very acute, the apex recurved, and tipped with bright orange, strongly channelled beneath; the membrane of the elytra is brownish; the abdomen beneath pitchy brown, darkest at the apex, and palest on the outer margins and along the central keel; ventral spine pale, tipped with brown. Breast brownish, with the sternal keel semi-transparent. Head beneath brownish.

This species may be at once distinguished from *A. uniguttatum* by the great size of the thoracic processes; it also wants the large orange spot at the base of the scutellum, which that species possesses.

Sp. 8. *Acanth. (Sast.) lineatum.*

A. (S.) griseo-testaceum, fusco-punctatum; thorace linea media tenui, longitudinali, flava, elytris macula transversa fulva, ♀. Long. lin.  $3\frac{1}{3}$ .

Above dusky testaceous, strongly punctured with brown. Head yellow, with a brown line on each side of the median lobe, and a row of brown punctures on each of the lateral lobes. Eyes brown. Thorax with the lateral spines acute, slightly recurved, pitchy brown; a transverse band near the anterior margin, and a narrow longitudinal line along the middle of the thorax, impunctate, yellow. Scutellum, yellowish brown, paler towards the apex, and with a yellow spot in the centre of the base. Elytra with the coriaceous portion dusky testaceous, thickly and strongly punctured, the apex yellowish; a short, transverse, impunctate, orange band, near the outer margin, considerably beyond the middle, directed towards, but not reaching the internal angle; membrane transparent, faintly clouded with brown. Abdomen above deep red, the margins yellowish. Head, thorax and abdomen, beneath, with the legs, rostrum and antennæ, testaceous; the antennæ rather darker. Ventral spine short, scarcely reaching the intermediate legs.

The remaining four species are all described. They are, of the *Edessides*, *Eusthenes robustus*, Le P. and Serv., and *Dalcantha dilatata*, Am. and Serv.; of the *Phyllocephalides*, *Tetroda Histeroides*, Fab., (*Phyllocephala furcata*, H. Schäffer, who quotes Stoll's figure, which is cited by Fabricius for his *Ælia Histeroides*); and lastly, the singular *Megymenum cupreum*, Guér.